

MINNESOTA'S WATER TECHNOLOGY CLUSTER

With more than \$729 million in foreign sales in 2012, Minnesota is among the United States' top 10 exporters of water and wastewater treatment technology. The state's largest international markets for these products include Canada, Japan, China and Germany. Minnesota's water technology exports have grown 170 percent over the past decade. The industry employs nearly 15,500 Minnesotans and is well positioned for continued growth.

Many of the world's largest water and wastewater treatment companies have headquarters in Minnesota. Minneapolis-based **Pentair** (now merged with Tyco Flow Control) is a global water flow management and filtration powerhouse with \$7.7 billion in annual revenues. The firm's nanofiltration technology is helping meet growing global demand for water purification. Ecolab's acquisition of Nalco, the world's largest maker of industrial water treatment, positions it at the forefront of an industry expected to grow 5.9 percent annually. Renowned innovator **3M** makes water filters and sensors that detect leaks in water infrastructure. Considering that 20 percent of municipal water is lost annually to leaks, this product can dramatically decrease waste.

Other noted innovators have moved operations to Minnesota to join the fast-growing water technology cluster. **General Electric Water & Process Technologies**, formerly Osmonics, has a "Center of Excellence" for manufacturing of reverse osmosis and nanofiltration membranes. Edina-based **Dow Water & Process Solutions** manufactures water purification and desalination membranes, employing 500 people. **Aeration Industries International** is a pioneer in aeration technology. The company's Chaska facility employs 70 people and has sales in 92 countries worldwide.

Emerging firms have also found opportunities. **Open Systems International** offers applications to manage and optimize large water and hydro networks. **NewWater**, a startup that launched with technology licensed from the University of Minnesota, creates filters that use enzymes to reduce atrazine concentrations in water. **Waterfilters.net**, a Minnesota-based online superstore for water filters, saw its revenue grow 371 percent in less than five years.

The Right Ecosystem

With one of the nation's best-educated workforces, a history of innovation and an emphasis on sustainability, Minnesota offers water and wastewater treatment companies the ideal laboratory for researching and developing game-changing water technologies. As new discoveries lead to new products, Minnesota's transportation infrastructure—ports, highways, railroads and international air service—can move goods to customers around the world. This unparalleled economic ecosystem has built and attracted the leaders in the field and will continue to nurture the industry.



Minnesota

Water Tech Vision

MINNESOTA: Leadership from the Land of Lakes

MINNESOTA'S WATER TECHNOLOGY VISION

Brimming with nearly 12,300 lakes (including Lake Superior, the world's largest freshwater lake) and flowing with about 70,000 miles of rivers and streams, Minnesota's most treasured natural resource is water. So, it's no surprise that the state has acquired a reputation for leadership, innovation and growth in the water industry. You would expect nothing less from a state whose very name means "Land of Sky-Tinted Waters."

Water and wastewater treatment is expected to grow into a \$22 billion dollar industry by 2016 and with industry titans like 3M, Dow, Ecolab, GE and Pentair the state is primed to capture much of that growth.

Many water technology companies are drawn to Minnesota by these key advantages:

- **ROBUST NETWORKS:** Minnesota is home to excellent universities with unrivaled expertise in water technology and abundant human capital. The state also possesses internationally known financing, law firms and logistics companies to support every step of the product cycle.
- **COLLABORATIVE ENVIRONMENT:** State and local government industries partner with business to ensure firms can easily locate and access the financing and technical expertise they need.
- **PRIME LOCATION:** Minnesota's central North American location and exceptional rail, river, air and highways access make reaching global suppliers and customers easy and affordable.

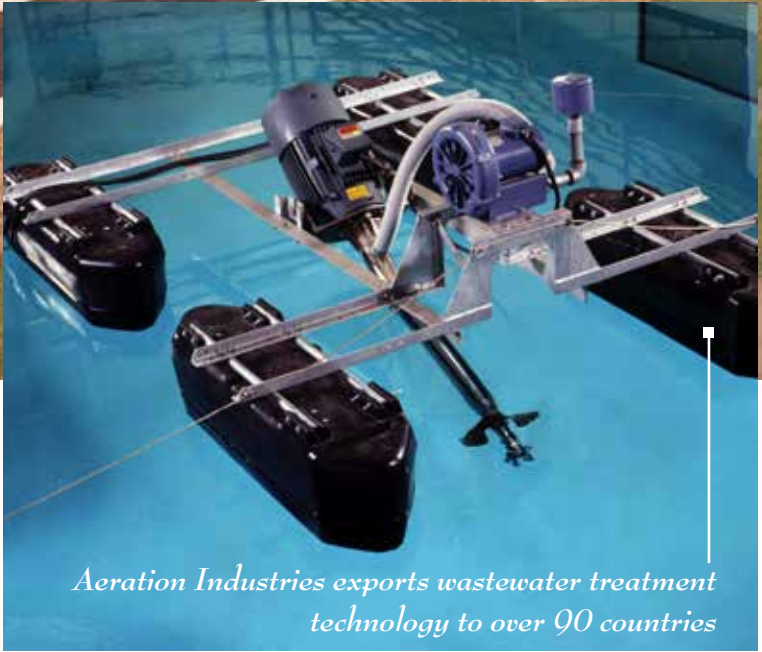
In addition, Minnesota's educated workforce, its tradition of manufacturing, and its vibrant culture of entrepreneurialism provide the right climate for industries of all kinds to grow. It's why 19 Fortune 500 companies call Minnesota home.



MINNESOTA'S OPPORTUNITY IN A BOOMING INDUSTRY

Rapid growth around the world has put tremendous stress on the global water supplies. By 2050, the United Nations predicts 2 billion people will face water scarcity. To address this impending crisis, an estimated \$22 trillion in water infrastructure investments will be necessary worldwide by 2030. Minnesota is primed to take advantage of opportunities in Treatment and Reuse; Filtration, Desalination and Membrane Technologies; Pumping; and Aeration.

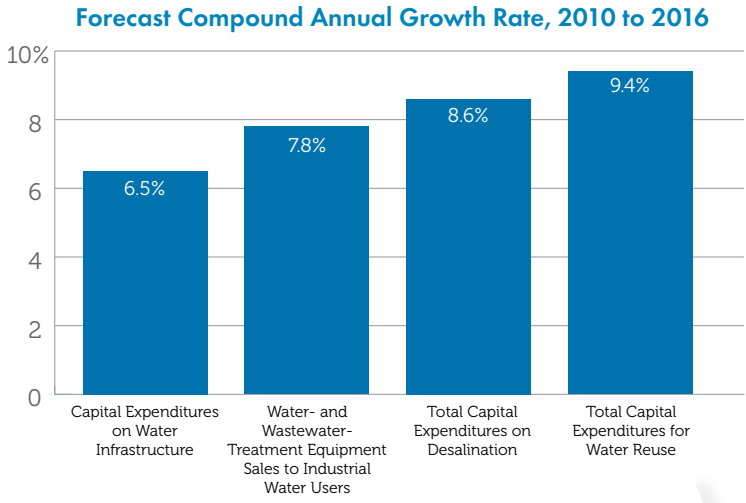
- **WATER TREATMENT AND REUSE:** Minnesota is home to major operations of three companies—Ecolab, GE and Pentair—identified by Citi Research & Analysis as the world's top water reuse companies. (No other state has such a concentration of expertise.) PricewaterhouseCoopers estimates that the amount of recycled water will double over the next five years.
- **FILTRATION, DESALINATION AND MEMBRANES TECHNOLOGIES:** Major Minnesota companies Dow, GE, Pentair and 3M have invested millions in advanced filtration. Morgan Stanley projects that membrane technology alone will grow an impressive 42 percent from \$3.3 billion in 2010 to \$4.7 billion in 2016. Citi Research & Analysis has named the four Minnesota firms among the world's top seven companies for membrane technology.



- **PUMPING:** Efficient pumps are vital to booming industries like desalination, irrigation and wastewater treatment. Minnesota ranks fifth in the nation for pumping equipment manufacturing employment overall and the second in the Midwest, behind Illinois.
- **AERATION:** With long established innovators like Aeration Industries and Aeromix Systems, Minnesota has developed a strong competitive advantage in export of aeration technologies.



In a showcase of high-tech water reuse systems, Pentair converted Target Field, home of the Minnesota Twins, to the highest LEED rating of any major league baseball stadium in the U.S. During its first year open, the stadium was able to conserve an estimated 2 million gallons of water.



Source: Global Water Intelligence as of March 2010